

Serial No: 10/064,374

IN THE CLAIMS:

Please amend claims 3, 4, 6, 10, 12 and 16, and cancel claims 1, 2, 5, 8, 9, 14, 15, and 17 as follows:

Claims 1 and 2. (cancelled)

1 Claim 3. (currently amended) ~~The liquid crystal display device~~
2 ~~according to claim 2,~~ A liquid crystal display device, comprising:
3 a liquid crystal cell forming an image display area;
4 a driver for applying a voltage to said liquid crystal cell;
5 an overdrive controller for controlling said driver to apply an
6 overdrive voltage exceeding a targeted pixel value to said liquid crystal
7 cell, wherein said overdrive controller controls such that the driver outputs
8 the voltage to accelerate or decelerate a brightness transition for each sub-
9 pixel in order to make up effective brightness of each sub-pixel which forms
10 a single full-pixel;

11 wherein said overdrive controller selects the overdrive voltage for the
12 sub-pixel exhibiting the slowest transition of brightness and selects the
13 voltage to accelerate or decelerate a brightness transition for the other
14 sub-pixels in order to coordinate with the sub-pixel exhibiting the slowest
15 transition; and

16 wherein said overdrive controller stores predicted capacitance for each
17 of the sub-pixels and calculates the voltage to be accelerated or decelerated
18 accelerate or decelerate a brightness transition for each sub-pixel in order
19 to coordinate with each other based on the predicted capacitance.

1 Claim 4. (currently amended) ~~The liquid crystal display device~~
2 ~~according to claim 1,~~ A liquid crystal display device, comprising:
3 a liquid crystal cell forming an image display area;
4 a driver for applying a voltage to said liquid crystal cell;
5 an overdrive controller for controlling said driver to apply an
6 overdrive voltage exceeding a targeted pixel value to said liquid crystal
7 cell, wherein said overdrive controller controls such that the driver outputs
8 the voltage to accelerate or decelerate a brightness transition for each sub-
9 pixel in order to make up effective brightness of each sub-pixel which forms
10 a single full-pixel; and

11 wherein said overdrive controller stores predicted capacitance for each
12 of the sub-pixels and calculates the overdrive voltage based on the predicted
13 capacitance.

Serial No: 10/064,374

Claim 5. (canceled)

1 Claim 6. (currently amended) ~~The liquid crystal display device~~
2 ~~according to claim 5, wherein said controller further comprises:~~ A liquid
3 crystal display device, comprising:
4 a liquid crystal cell for displaying an image when a voltage is applied
5 to each pixel in a thin film transistor (TFT) structure;
6 a driver for applying a voltage to each of the pixels of said liquid
7 crystal cell;
8 a controller for controlling the driver to apply a voltage to said
9 liquid crystal cell, the voltage exceeding what is to be applied when
10 displaying targeted brightness on the liquid crystal cell, wherein said
11 controller comprises:
12 transition state comprehending unit for comprehending for each of the
13 sub-pixels a transition state between present starting brightness of said
14 liquid crystal cell predicted in advance and targeted brightness at one
15 refresh cycle later which is to be displayed hereupon;
16 voltage calculating unit for calculating a voltage to be applied to
17 each of said sub-pixels based on the transition state comprehended;
18 capacitance predicting unit for predicting a capacitance value of a
19 pixel that will be is reached after the refresh cycle when applying said
20 voltage calculated by said voltage calculating unit to the pixel with the
21 present capacitance value; and
22 a storage device for storing said capacitance value predicted by said
23 capacitance predicting unit.

1 Claim 7. (original) The liquid crystal display device according to
2 claim 6, wherein said present starting brightness used by said transition
3 state comprehending unit is said capacitance value stored in said storage
4 device.

Claims 8 and 9. (cancelled)

1 Claim 10. (currently amended) A liquid crystal display drive circuit,
2 comprising:
3 a capacitance predicting unit for predicting a capacitance value that
4 each pixel ~~will reach~~ reaches at one refresh cycle later when applying a
5 predetermined voltage for targeted brightness;
6 a storage device for storing the predicted capacitance value;
7 a transition state comprehending unit for comprehending a transition
8 state of brightness based on the targeted brightness of each sub-pixel at one

Serial No: 10/064,374

9 refresh cycle later and the capacitance value stored in said storage device;
10 and

11 a voltage calculating unit for calculating a voltage to be applied to
12 each sub-pixel based on the transition state of brightness comprehended.

1 Claim 11. (original) The liquid crystal display drive circuit
2 according to claim 10, wherein said voltage calculating unit calculates the
3 voltage which is accelerated or decelerated to coordinate the effective
4 brightness of each sub-pixel.

1 Claim 12. (currently amended) A method for driving a liquid crystal
2 display, wherein an input pixel value is overdriven to output a modified
3 pixel value, the method comprising the steps of:

4 predicting a capacitance value that each pixel ~~will reach~~ reaches at
5 one refresh cycle later when applying a predetermined voltage for the input
6 pixel value;

7 storing the predicted capacitance value;

8 comprehending a transition state of brightness for each of sub-pixels
9 constituting each pixel based on an input pixel value at one refresh cycle
10 later and said stored capacitance value; and

11 calculating a voltage for a predetermined sub-pixel to be underdriven
12 depending on the transition state of brightness comprehended.

1 Claim 13. (original) The method according to claim 12, further
2 comprising the steps of:

3 selecting the sub-pixel exhibiting the slowest transition of brightness
4 from the transition states comprehended; and

5 calculating a voltage for the selected sub-pixel to be overdriven.

Claims 14 and 15. (cancelled)

1 Claim 16. (currently amended) A program for directing a computer to
2 drive a liquid crystal display device, the program comprising the functions
3 of:

4 predicting a capacitance value that each pixel ~~will reach~~ reaches at
5 one refresh cycle later when applying a predetermined voltage to said liquid
6 crystal display device based on a pixel value to be displayed;

7 storing the predicted capacitance value in a buffer of said computer;

8 comprehending a transition state of brightness for each of sub-pixels
9 constituting each pixel based on an input pixel value at one refresh cycle
10 later and said stored capacitance value; and

Serial No: 10/064,374

- 11 calculating a voltage for a predetermined sub-pixel to be underdriven
- 12 depending on the transition state of brightness comprehended.

Claim 17. (cancelled)